Instructor

Name Dr. Jun Song  
Office 335J Fretwell  
Office Hours MW 4:00 pm – 5:00 pm

Course Information

Meeting M 5:30 pm - 8:15 pm, Aug. 19, 2019 - Dec. 04, 2019, Classroom: Fretwell 305.  
Website CANVAS.  
Textbook Required
An Introduction to Statistical Learning with Applications in R, by Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani.  
Recommended
The Elements of Statistical Learning, by Trevor Hastie, Robert Tibshirani, and Jerome Friedman

Prerequisite STAT 5110 or STAT 5123

Description
This course covers many statistical learning methods which are relevant and useful in a wide range of academic and non-academic disciplines. By introducing principal ideas in statistical learning, the course will help students to understand conceptual underpinnings of methods in data mining. The topics include statistical learning; classical linear methods for regression and classification; cross-validation; bootstrap; modern linear methods; non-linear methods; tree-based methods; support vector machines; unsupervised learning. At the end of the course, students should have a basic understanding of how all of these methods work and be able to apply them to real-world problems.

Software to use R, Python, Matlab, and C++. See the Software section detail.

Evaluation

Attendance See Attendance section.  
Homework 30%  
Quizzes 15%  
Midterm Exam 25%  
Final Project 30%

Grading

A 90.00 % –  
B 80.00 % – 89.99 %  
C 70.00 % – 79.99 %  
D 60.00 % – 69.99 %  
F – 59.99 %
Required Work

Attendance • Students are expected to be present on time for all class sessions. Students are responsible for all announcements and supplements given in class.
• Attendance will be checked randomly through pop quizzes or calling names in class.
• You are allowed 3 excused/unexcused absences. Each additional absence will lower your final score by 4%.
• Using a cell phone or distraction of class is not allowed. In this case, you will be asked to leave immediately and it will count as an unexcused absence.

Homework • There will be homework assignments for each chapter.
• Homework problem list will be announced at least a week before the due dates and it will be posted on CANVAS.
• Homework will be collected at the beginning of the class on each due date. No late homework will be accepted and email deliveries are NOT acceptable unless you are told to do.
• You are allowed to drop the lowest homework score.

Pop Quizzes • Pop quizzes will be given occasionally in class without announcement beforehand.
• Each quiz will take 15–30 minutes to complete.
• There will be no make-up quiz unless you have a proper documentation or a note from Dean of Students Office.
• You are allowed to drop the lowest quiz score.

Midterm Exam • There is one in-class closed-book midterm exam on October 14.
• The exam might include computing, which will be given as a take-home.
• Students are allowed to bring one, 8.5 × 11 (letter size) double-sided handwritten formula sheet.
• There will be no make-up exam unless you have a proper documentation or a note from Dean of Students Office.

Final Project • We will have a final group project which includes a project proposal, presentation, and the project report.
• Project proposal (5 points) due by November 11.
• Project presentation (10 points): November 25 and December 2.
• Project report (15 points) due by December 6.

Statistical Software R

R is a free statistical software and very strong in statistical analysis. In this course, we mainly use R for computation. It is a script-based language and easy to learn on your own. Python, Matlab and C++ are optional choices for the homework, project and exam. Any other languages such as SAS codes will NOT be accepted.

R Introduction R Introduction by R Core Team
R Practice Data Camp Introduction to R
Course Policies

Syllabus
The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be sent by CANVAS notice.

Announcement
You are required to attend classes and check CANVAS course page on a daily basis. You are responsible for any announcements in class. In case of absence, students should let the instructor know about the absence in advance 48 hours before the class.

Collaboration
Although you are expected to complete the work on your own, I understand that a certain amount of collaboration may occur. However, you must turn in your own work which presumably reflects your understanding of the material.

Communication
Email questions will be responded within 2 business days.

Disability Service
UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230.

Academic Integrity
All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online.